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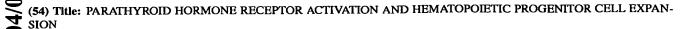
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(57) Abstract: The invention relates to methods for manipulating hematopoietic progenitor cells and related products. In one aspect the invention relates to the use of agents that activate a PTH/PTHrP receptor to enhance the growth and maintenance of hematopoietic progenitor cells in vivo and in vitro, to enhance mobilization of hematopoietic stem cells, to improve the efficiency of targeting cells to the bone marrow, and/or to modulate hematopoietic progenitor cell function.





## INTERNATIONAL SEARCH REPORT

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C. DOCUMENTS CONSIDERED TO BE RELEVANT			
Category *	Citation of document, with indication, where ap	propriate, of the relevant passages	Relevant to claim No.
Y	FULLER, K et al., Induction of osteoclast formation		1-40
*	Vol. 158, No.3, pages 341-359	Touring of Emmoring 1970;	
Y	LIU, B. et al., Conditionally immortalized murine bone marrow stromal cell.		
- <u> </u>	Endocrinology, 1998, Vol. 139, No. 4, pages 1952-1964		
Y	TAICHMAN, R. et al., Hepatocyte growth factor is secreated by osteoblasts. British J of		
	Haematology, 2001, Vol.112, NO.2,		
	pages 438-448		
Y	Y CALVI et al., Activated parathyroid hormone/parathyroid hormone-related protein.		1-40
	Journal of Clinical Investigation, 2001, Vol. 107, No.3, pages 277-286  TAICHMAN, R. et al., Human osteoblasts support human hematopoietic progenitor cells.		i. 1-40
Y	Blood, 1996, Vol.87, No.2, pages 518-524		).   1-40
Y			e 1-40
entire document, Abstract in particular.			-
Further	documents are listed in the continuation of Box C.	See patent family annex.	
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